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EXPLORATION LICENCE 9430

TOUHEYS

Pine Creek 1:250,000 map sheet area, SD-52-8
Pine Creek 1:100,000 map sheet area, 5270

ANNUAL REPORT
FOR THE PERIOD ENDING 15 MAY 1999

Corporate Developments Pty. Ltd.
ACN 000 610 271

G. Chrisp

25th June, 1999

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1.0 SUMMARY

Previously, data base collected for Touheys was received and data relating to gold mineralisation extracted. Following this an initial field programme of 1:10,000 geological mapping together with rock chip sampling and prospecting was carried out.

Initial prospecting by Mr. John Crago in 1990 south of the Touheys North Mine (initially prospected by the Touhey brothers who were working the nearby Rosemary Mine) led him to finding the Touhey South deposit. Gold mineralisation occurs in oxidised quartz veins within discrete zones apparently controlled by structure within the Wildman Siltstone. The Touheys deposits represent a typical mesothermal style mineralisation; a style that appears to be controlled by strike slip shearing; and parasitic folds in the north of the EL and dextral wrench faults in the southern portion.

Exploration has been directed towards evaluating this prospective horizon between and along strike from the Touheys North open pit, Touheys Central and Touheys South open pit. Prospecting and geological mapping has traced the hosting, silicified structure for over four kilometres along strike, though scree obscures the southern extent.

Work undertaken during the year by John Crago comprised walking traverses either side of the area of known mineralisation in the expectation that additional gold-bearing stratigraphic horizons might be recognised.

No promising horizons were found in the traversing, and work in the future will be confined to the areas of known mineralisation.

KEYWORDS

Vein Type Gold

Lower Proterozoic

Burrell Creek Formation

Greywacke Tuffs, Siltstone

Anticlinal Coaxial Shear System

NNW Structural Grain

2.0 TENURE

Exploration Licence 9430 was granted to Corporate Developments on 15th May, 1996 for four years.

The Licence covers an area of 2 blocks namely,

Mount Masson Sheet 64/28 and 65/28

The Expenditure Covenant for the first year of the title was $5,000

3.0 PREVIOUS EXPLORATION

An examination of the open file reports on exploration in the Touheys area indicates that limited exploration has been performed since the lifting of the Mt. Wells Mineral Policy Reserve. The Touheys area is approximately 20kms NE of Mt. Wells tin mine (7935700E, 8505400N).

Morestoe Pty. Ltd. mined the Touheys North and Touheys South deposits by small open cuts trucking the ore to Cosmo Howley mill for toll treatment.

The Touheys North mine, 500m north of the licence is an east-west quartz system of some 190m that varies in width between 1.5 and 0.3m with an average minded grade of 5.8g/t Au. The Touheys South mine consists of a narrow (up to 1.4m) quartz vein system that has a 300m mineralised strike length and is supergene enriched at the water table (Jettner 1995). To August 1993 these pits had produced 8,955 tonnes at a grade of 8.4 g/t Au.

In 1988 Norgold Ltd. conducted mapping, costeaning, sampling and drilling along strike and south of Touheys North. This led to finding Touheys Central where three RC drill holes on a single fence reported at best 5m @ 0.5 g/t AU (Mr. John Crago pers comm.) Touheys Central is an east-west trending exposed oxidised quartz vein zone up to 5m wide.

4.0 REGIONAL GEOLOGY

The Touheys area of Mount Wells district lies in the central portion of the Paleo-proterozoic Pine Creek Geosyncline, a macroscopic structure of 66,000 sq km in the Katherine to Darwin region. This province consists essentially of Early Proterozoic fluviatile and basinal sediments (with minor bimodal volcanics) that on-lapped small exposures of Archaean inliers. Ongoing sedimentation changed to flyschoid sedimentation. The regional stratigraphy is shown in table one and described in Stuart-Smith et al.

During the waning stages of the deposition, igneous dykes and sills were intruded. The sediments were then folded and metamorphosed to Lower Greenschist facies grade metamorphism in the central part of the basin.

This led to the development of the Top End Orogeny (1870-1855 Ma), when sny- to post tectonic granitoid plutons and dolerite lopoliths were emplaced. Extensive granite emplacement 91850-1800 Ma) took place after the main deformation event as evident by the superposition of contact over regional metamorphic fabrics (Figure 3).

The tectonic history suggests four phases of deformation;

D1 and D2 are related to metamorphic development produced bedding and foliated regional folds.

D2 developed shallow dipping low angle shear zones in response to crustal shortening during basinal compression.

D3 and the development of F3 folds that are tight to very tight N-S trending folds and refolded S1/S2 folds.

D4, a final folding episode that refolded F3 folds along an E-W axis producing open folds with steep dipping axial planes.

The basin is unconformably overlain by flat lying Mesozoic and younger strata (Figure 3).

4.0 REGIONAL GEOLOGY

4.1 Stratigraphy

The Licence area is underlain by sediments of the Lower Proterozoic WILDMAN SILTSTONE that is unconformably overlain by the KOOLPIN FORMATION. The licence lies towards the eastern margin of the Katherine - Pine Creek - Darwin Shear Zone Structure is dominated by open north plunging folds with younger north-east trending cross folds and faults.

The WILDMAN SILTSTONE is predominantly a pelitic unit, with sandstone lenses, up to 750m thick. It consists of two members, both cropping our in the licence. The lower member (400m) is poorly exposed being thinly bedded bleached white to grey carbon rich siltstone and shale with minor ferruginous horizons. The upper member (350m) is thinly bedded pelite, often carbon rich and sandstone that can be sericitic.

The KOOLPIN FORMATION crops out in the south west portion of the licence. It is a distinctive iron rich sequence of pelites and arenites.

These Early Proterozoic rocks have been subjected to regional greenschist metamorphism (Map 1).

4.2 Structure

Structural mapping suggests four separate deformations have occurred. The first deformation (D1) resulted in the lithologies being isoclinal folded about sub-horizontal N to NE trending fold axes (F1).

The folds are asymmetric, verge to the W, and in part may be overturned. These folds are associated with a steeply E dipping penetrative regional cleavage (S1). Cleavage bedding relationships suggest these folds are widespread in the tenement (Map 1). This event produced strong layer parallel or sub-parallel S1 axial place schistosity or planer fabric.

F1 folds are deformed by two later shearing events. D2 shear zones trend NNE and are steeply E dipping and layer parallel. They are up to 100m wide, being defined by a schistose foliation (S2). The S2 foliation contain a dominant near vertical mineral lineation perpendicular to boudin necks observed in quartz veins. These shear zones appear to be retrograde shear zones associated with exhumation.

This foliation was disrupted by a third structural episode. D3 shear zones are up to 500m wide, produced a dominant shallow dipping (30') low angle cleavage with well developed N-S foliation (S3) defined by C-S fabrics and a sub horizontal mineral lineation (L2). These features indicate dextral movement of a wrench shear system and are better developed to the west of the licence eg the Mt. Wells to Mt. Ringwood shear.

Throughout the general area are faults that cut the stratigraphy at oblique angles; particularly the 120' set being stronger than the 030' set. Both these directions manifest themselves in the drainage pattern. These faults form conjugate sets which were mainly brittle in character forming extensional faults and fractures, step like breaks, imbricated fractures and slickensides. These features are observed on the quartz reefs that trend dominantly either at 160' or 120'. They indicate the importance of the strike slip or coaxial movement. These features and movements are likely to be post the quartz sulphide mineralisation.

Slickensides can be found on the bedding planes plunging 30'N. The 30' direction of shearing, marked by narrow quartz veins, is often perpendicular to the strike of the beds, whilst the 120' direction is oblique slip. It is likely that tensile deformation in the rock was followed by increased shearing particularly in the carbon rich shales or the chlorite altered siltstones adjacent to the quartz reefs.

Tight upright F2 folds with axes trending NNW - SSE are common on Map 1. Their asymmetric character indicates the direction and sense of movement. The principle stress acted from the ENE towards WNW and reflects the granitoid intrusion within the major anticlinal core to the east. The axial plane of F2 folds dip variably and represent "Z" drag fold structures associated with shearing along west fold limbs.

The evolving stress field that led to four deformations and pre-, syn- and post-granitoid intrusion is reflected in the multiple phases of vein quartz. They are

1: compression F1 which created pre-quartz mineralisation primary tensile fractures.
2: compression of the WSW - ENE direction (F2), which produced shear structures as reverse faults and strike - slip faults, tensile fractures and en echelon folds and faults
3: basement uplift or basement fault activity causing tensile openings of existing structures to form conjugate faults.

5.0 EXPLORATION MODELS

The Touheys North and South deposit are found in similar stratigraphic position, near the top of the Lower Wildman Siltstone and approximately 50m below a pyrite rich greywacke unit. This bedding shear zone is marked by semi continuous exposures of vein quartz and sericitic rich quartz and siltstones. It appears the gold mineralisation is controlled by a post ductile deformation brittle fracture pattern with mineralogy being controlled by lithology and suitable structure. At Touheys North the auriferous quartz reef trends 120', and dips 25' to 40' north, and is located on a parasitic fold, formed during shearing.

At Touheys South the mineralised shear is slightly discordant to bedding, dipping about 45' west and trending 160'. This ballooning may be due to a dilatational jog between two active contemporaneous faults.

The mineralisation appears to be influenced by D2 post deformation brittle failure. This event may be contemporaneous with granitoid emplacement. The mineralised horizon is often slightly discordant to both bedding (S0) and regional cleavage (S1), and is offset by late north-west trending D4 faults. The principle stress direction is at a tangent to the direction of the axial plane of the major ductile D2 folds which is about 160'.

A conjugate failure is recognisable about 120 - 130' and a D4 late stage tensional fracture, probably of sinistral sense, at 070'. This mineralisation may be part of an axial shear system, the main trend is about 160', with the larger anastomosing veinlets between the main quartz veins trending 120 -130' and a tighter finer quartz set at 10-20'. The faults trending 120' appear to have displaced the mineralised horizon, but may have been important in producing a structural control on mineralisation. These faults are obvious as photo-lineaments on landsat and aerial photography. A summary of the structural features is presented in Figure 4.

In detail, the prospective horizons varies between <0.3 to 5m wide, and is filled with sheared and argillaceous siltstones, minor to accessory quartz and trace to co-dominant sulphides. Several habits of quartz are present, ranging from lensoidal white quartz within the shear plane, to fine cross cutting en echelon veinlets. Both quartz systems are unmineralised. Sulphides are dominated by pyrite, though the ore has a dominant arsenic content particularly at Touheys North to a higher base metal tenor at Touheys South. Gold is apparently associated with the quartz sulphide event which was introduced late in the shearing process but predates the fine cross cutting quartz veins.

As is common in orogenic fold belts the early development of fundamental structures was followed by the introduction of auriferous solutions that reacted with country rock to produce deposits. Subsequent shear zones remobilised this mineralisation and concentrated the mineralisation favourable trap sites.

6.0 FIELDWORK COMPLETED AND DISCUSSION

During the first year, exploration activities have included geological mapping at 1:10,000 scale prospecting and rock chip sampling of prospective horizons. Seven samples were assayed for gold by Amdel laboratories, Darwin. Descriptions and assay results are presented in Appendix 1, with sample locations are shown on Map 1.

A study of the structural controls for gold mineralisation is considered important to finding blind targets and evaluating the known mineralised zones. Apparently the gold mineralisation was emplaced in the early shear zones during isoclinal fold development. The shear zones containing Touheys North, Touheys Central, and Touheys South is interpreted to be such a system. Mineralisation within the system was then remobilised and concentrated with the development of cross cutting shear zones, particularly the 100-120' set, leading to further dilation coinciding with the earlier deposits.

Favourable trap sites are between cross cutting shear zones, eg Touheys South where conjugate faults interact, eg the high grade shoot at Touheys South and a dilatational job between shears of 160' and 120' interacting eg Touheys North. The conjugate faults, reverse faults, bedding shear zones and fold axial shear zones have interacted and contributed to localise mineralisation. The understanding of tectonic processes, including the relationship between quartz veins and factor controlling the distribution of gold mineralisation needs further study.

Map 1 shows the observed geology. In the licence, the Wildman Siltstone crops out; unit 1 is a poorly exposed haematitic red brown and grey siltstone with minor sand lenses. However, unit 2 is well exposed being sandy siltstone and fine to coarse felspathic sandstone and sandstone. This map shows a marked bedding shear zone or reverse fault, trending 160' and dipping 45'W at Touheys South and trending east-west, dipping about 40'N at Touheys Central. This porous zone in carbon rich shales which is near the boundary between units 1 and 2 of the Wildman Siltstone has been receptive to incoming auriferous solutions. At Touheys Central this reverse fault separated a north plunging open fold in the sandstone, from tightly folded siltstones. This reflects the incompetence of the units.

Map 1 shows the location of rock chip samples and costeans dug on the auriferous shear zone. Results thus far indicate a zone of interest at Touheys central where assays up to 0.96 g/t Au occur. A three hole fence line drilled by Norgold returned a best intersect of 5m @ 0.5 g/t Au (J. Crago pers. Com.)

A quartz reef with sulphide gossan recently exposed on the access road assayed 0.31 g/t Au is likely to be part of the same system. Scree surrounds this occurrence. South of Touheys South open pit the quartz vein system splays and feathers. This is south of a 120' dextral fault. Here the anomalous gold values are more restrictive over 100m peaking at 0.66 g/t Au.

In the north-west corner of the lease is a north-west trending valley where the fold axes os isoclinal folds have probably developed into dextral axial shears. This area is beneath scree and alluvium and is considered prospective in the necking environment.

Work undertaken during the year by John Crago comprised walking magnetometer traverses across of the area of suspected mineralisation in the expectation that additional gold-bearing stratigraphic horizons might be recorded. (As John Crago discovered the original Touheys gold mineralisation, and the outcrop originally found was quite different to that normally found, there was an expectation that other previous prospectors may not have recognised similar outcrops as gold bearing.)

Unfortunately, apart from detecting numerous pieces of old iron, the method did not show any great variance across the suspected area of lode. In addition, 7 had auger holes were dug (see plan for location) but due to the depth of alluvium (or in several cases, boulder floaters), the holes did not reach any useful depth.

Russel Bluck was also engaged to investigate using remote sensing methods (eg satellite imagery, side tracking radar and possibly radiometrics) and reworking them (using the Maptek computer enhancement system) as a means to generate targets for close on ground investigation.

At that stage, the cost of the work exceeded the budget for the area, but we now believe the data may have been acquired and reprocessed and re-grided by Pitt Research, thus potentially reducing the cost of the method.

Earlier in the year, we requested reports on Mineral Claims MCN 4316 to released from closed file (as the MCN was surrendered) as we know the former Claim holder carried out a drilling programme prior to surrender. Unfortunately these reports have not been made available and our programme has not been as successful as we had hoped, as the drilling was stratigraphically important.

7.0 RECOMMENDATIONS

Understanding the structural geology of the area will guide future exploration. Whilst the area has been mapped, prospected and sampled on 1:10,000 scale base maps, more detailed mapping and evaluation at 1:2,500 scale base sheets is required. This area is considered prospective for repetitions of the Touheys style mineralisation particularly

1: down dip of the oxidised auriferous quartz outcrop at Touheys Central where 5m @ 0.5 g/t Au is intersected.

2: north-west of Touheys Central in an area of necking and probable dextral shear development.

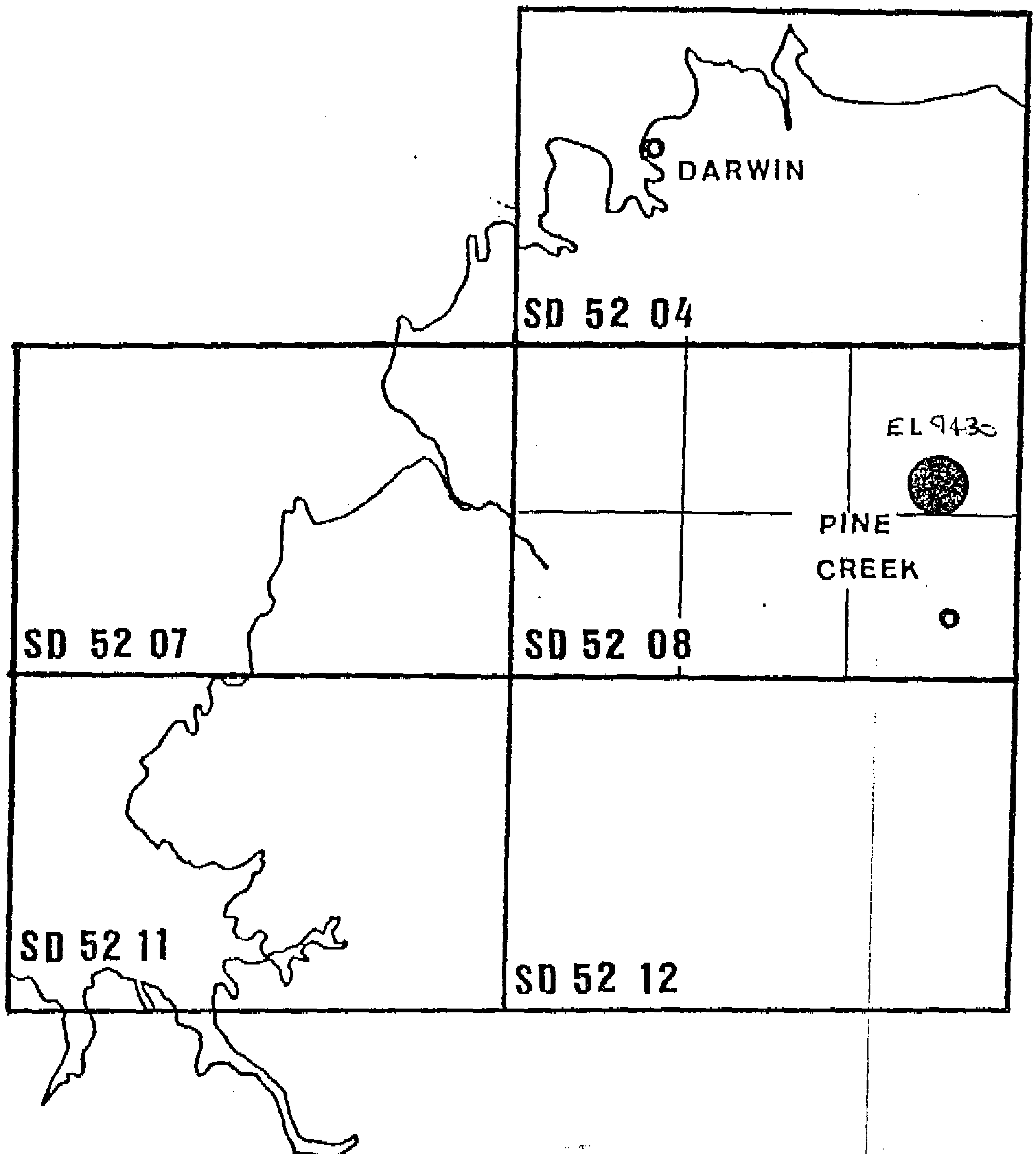
3: along strike, north and south from sample site MM70 where 0.31 g/t Au is recorded.

To evaluate these areas, additional costeaning on 50m centres with channel sampling of alteration zones and vein quartz, and an electrical survey to provide drill targets is advised. The carbon rich shales in themselves will provide geophysical anomalies, but often gold can be associated with such environs.

As a precursor to this work, the hand held PIMA method (which measures clay alteration and distinguishes the alteration from weathered clays) could be successful in defining anomalous zones by mapping alteration areas along the suspected line of the lode.

8.0 REFERENCES

Stuart-Smith PG, Needham RS, Bagas L, and Wallace DA, 1987
PINE CREEK. 1:100,000 geological map commentary. BMR Geology and geophysics.

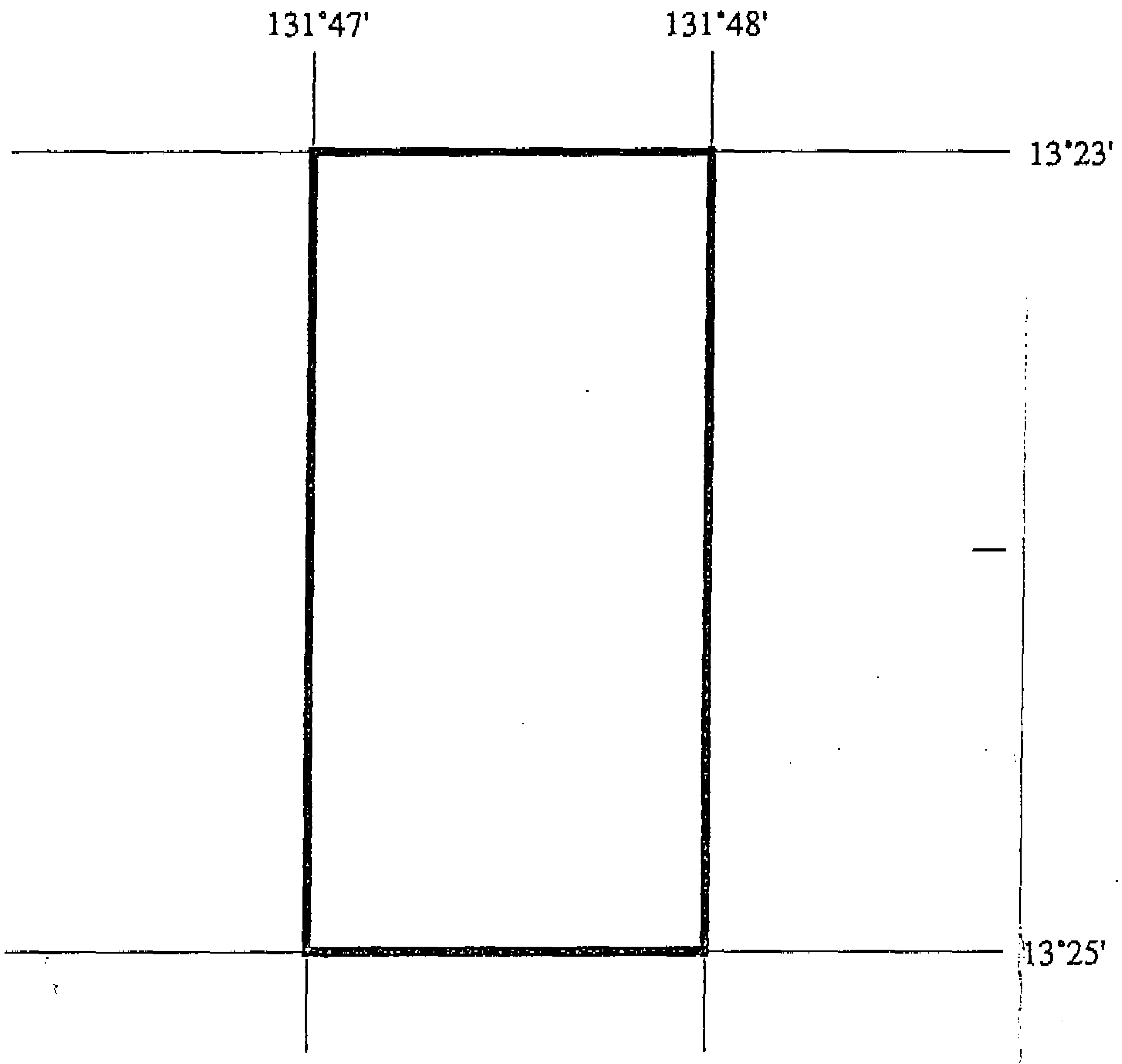


EXPLORATION LICENCE 9430

Mount Masson Area
Tenure Location Map

Figure 1

SECOND SCHEDULE
(Plan of Area)



EL9430
2 BLOCKS
6 sq kms

SCALE APPROX
1:50000

figure 2

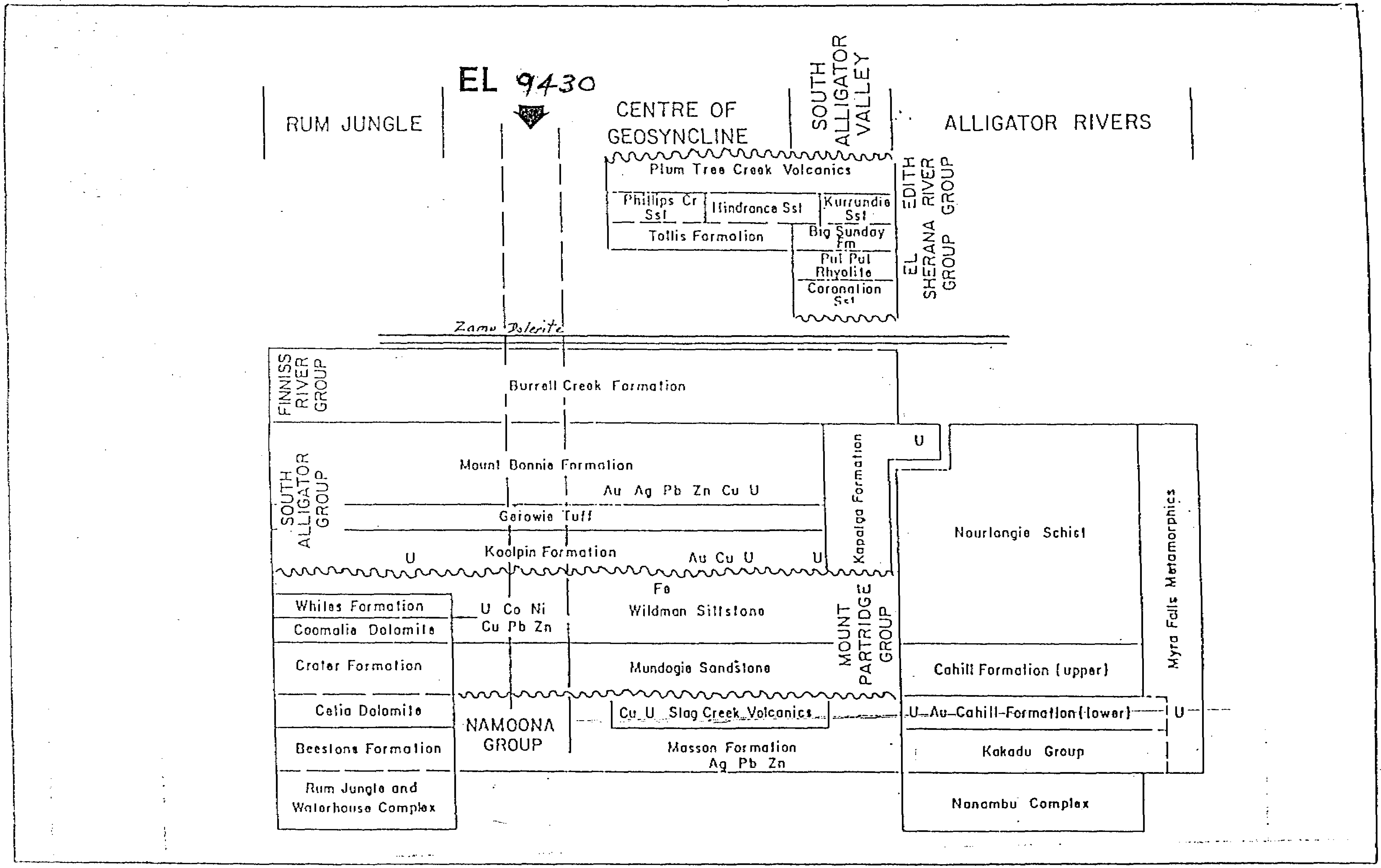


TABLE 1 - STRATIGRAPHY OF THE PINE CREEK GEOSYNCLINE

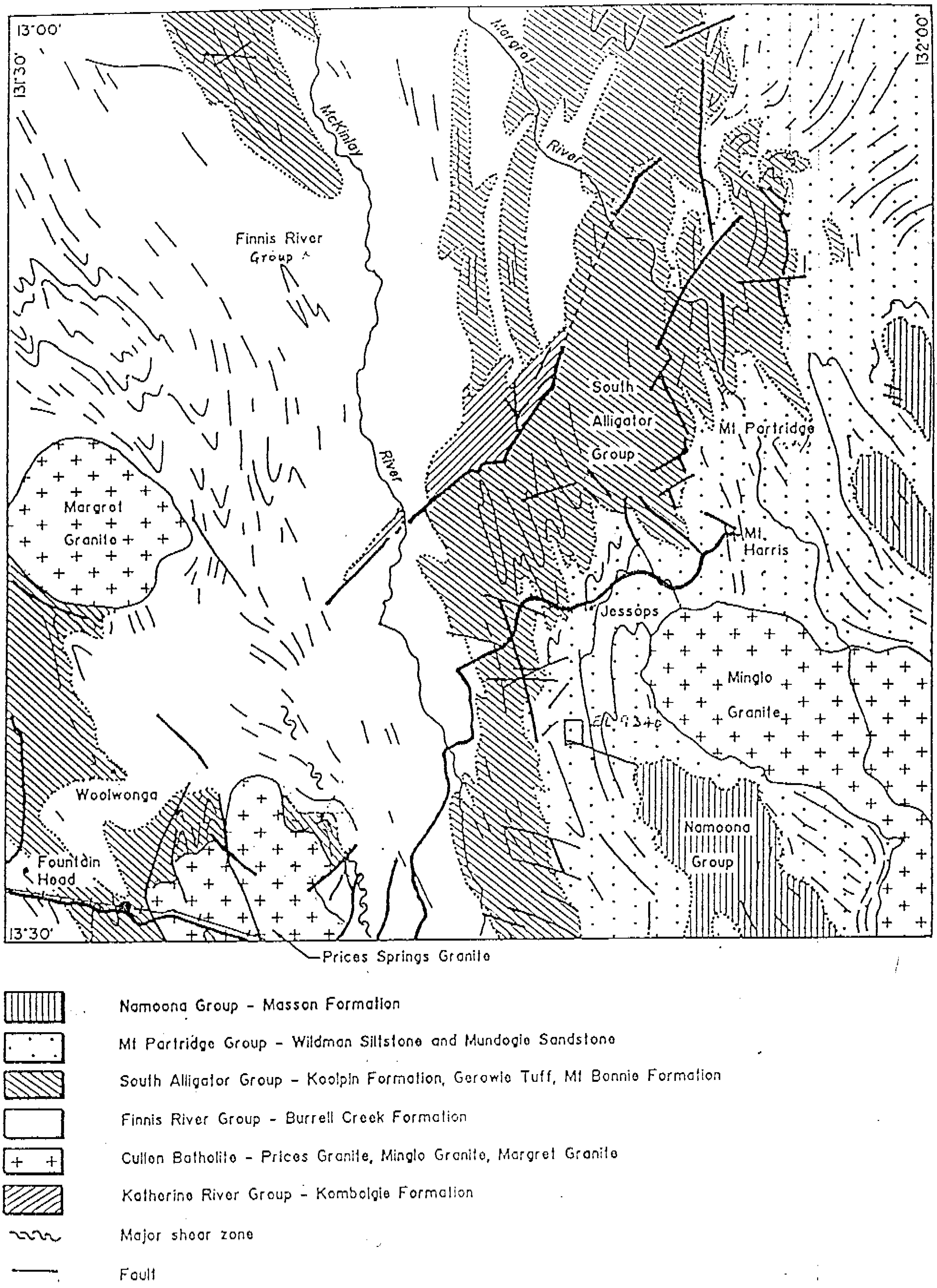
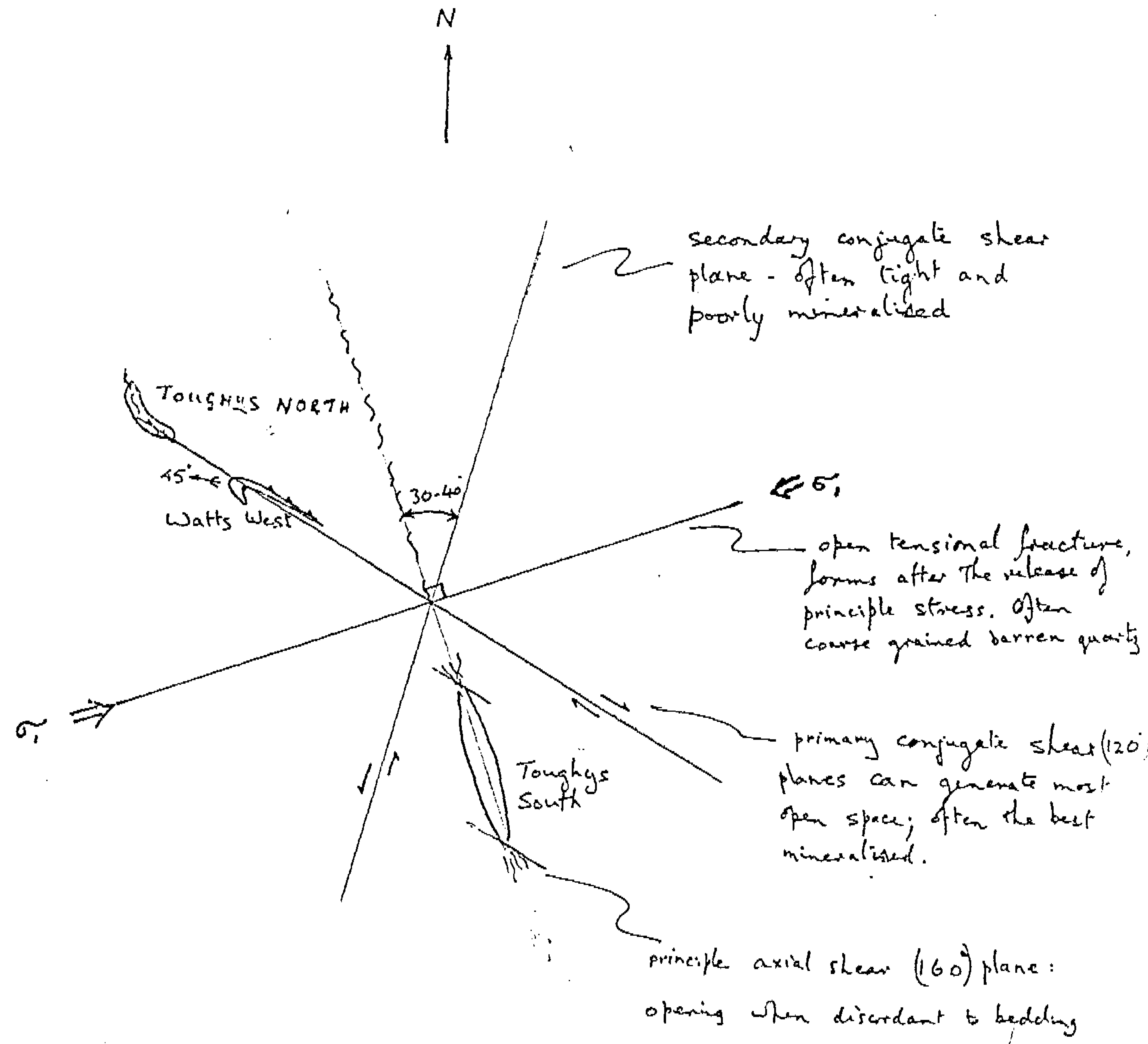


Figure 3 REGIONAL GEOLOGY - McKINLAY RIVER



ROSE DIAGRAM OF STRUCTURAL FEATURES AT TOUHEYS

FIGURE 7

amdel

Job: 6DN0697
O/N: 17858

Final

ANALYTICAL REPORT

SAMPLE	Au	AuDp1
MM055	0.03	--
MM056	<0.01	--
MM057	<0.01	--
MM065	0.21	0.21
MM066	0.09	0.09
MM067	0.03	--
MM068	0.02	--
MM069	0.08	--
UNITS	ppm	ppm
DET.LIM	0.01	0.01
SCHEME	FA1	FA1

S+X

Appendix 1   TOUGHYS ROCK CHIP SAMPLE DESCRIPTIONS

MM 55	Ferruginous siltstone with minor vein quartz. iron oxides and pyrite boxwork.
MM 56	Contorted vein quartz with iron vughs in siltstone.
MM 57	Reef quartz with iron vughs in siltstone.
MM 65	Reef quartz, up to 4m wide, in part brecciated with 15 - 25% boxwork.
MM 66	Reef quartz. 5m wide with 10 to 20% pyrite boxwork.
MM 67	Reef quartz. 0.5m wide with 5 to 15% pyrite boxwork.
MM 68	Quartz reef in siltstone, 5 - 15% pyrite boxwork.
MM 69	Ferruginous quartz reef, 5 - 15% pyrite boxwork.